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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/869,170

06/25/2001

Yuuki Matsumura

SONYJP-130

9790

530

7590

08/17/2006

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EXAMINER

SIMITOSKI, MICHAEL J

ART UNIT

PAPER NUMBER

2134

DATE MAILED: 08/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/869,170

Applicant(s)

MATSUMURA ET AL.

Examiner

Michael J. Simitoski

Art Unit

2134

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5-8,10-13 and 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-8,10-13 and 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. The response of 6/13/2006 was received and considered.
2. Claims 1-3, 5-8, 10-13 & 15 are pending.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1-3, 5-8, 10-13 & 15 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's response (pp. 8-10) argues the amended limitation. However, Quackenbush is cited for teaching that integrating watermarking with compression provides resistance to collusion attacks (col. 3, lines 10-15) by dividing the signal into scale factor bands (producing discrete amplitude ranges in each band) and creating watermarking information (multipliers) based on these bands (col. 6, lines 27-45). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Swanson to base the watermarking information also on at least one range of amplitudes within which a frequency representation of said audio signal is sampled during compression processing.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2134

5. Claims 1-3, 5-8, 10-13 & 15, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over “Robust audio watermarking using perceptual masking” by Swanson et al. (**Swanson**), in view of U.S. Patent 6,591,365 to **Cookson** and U.S. Patent 6,493,457 to Quackenbush et al. (**Quackenbush**).

Regarding claims 1, 6 & 11, Swanson discloses performing psychological auditory sense analysis/spectral shaping (p. 3, ¶1 & p. 10, §4) based on a predetermined compression characteristic (i.e. mpeg encoding) of said audio signal (p. 3, ¶1 & p. 6, ¶2) and outputting the result of the analysis as psychological auditory sense encoded information (p. 10, #1-3) and superimposing on said audio signal first digital watermarking information/watermarking on said input signal (p. 10, #7) on the basis of said psychological auditory sense encoded information/power spectrum, frequency masking (p. 10, #1-7 & p. 3, ¶1), characterized in that, upon compression of said marked signal to create a compressed signal (p. 15, §6.4), said first digital watermarking information/robust watermark can be completely or substantially recovered from said compressed signal (p. 15, §6.4), wherein said psychological auditory sense encoded information is indicative of the respective frequency bands of said audio signal on which said first watermarking information is to be superimposed (temporal masking properties of the audio) (p. 2, last ¶) and the respective levels to which the first digital watermarking information should be set prior to superimposition (amplitude increases or decreases with the audio) (p. 3, ¶1). While Swanson discloses multiple watermarks (p. 15, §6.5), Swanson lacks a explicitly a second watermark characterized in that upon compression of said marked signal, said second watermarking information cannot be completely or substantially recovered from said compressed signal. However, Cookson teaches that it is beneficial to include in an audio signal two

Art Unit: 2134

watermarks, one robust and one weak (col. 2, line 62 – col. 3, line 15) to detect if the watermark has been compressed and if the watermark is protected (col. 2, line 62 – col. 3, line 15), whereby when the marked audio signal is reproduced the survival state of said first and second digital watermarking information is operable as copy control information (col. 2, line 62 – col. 3, line 33). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to embed digital watermarking information that has small compression resistance toward said compression processing on said input signal. One of ordinary skill in the art would have been motivated to perform such a modification to detect if a signal has been compressed and to detect if the signal is copyright protected, as taught by Cookson (col. 2, line 62 – col. 3, line 33). Swanson lacks the first digital watermarking information and said second digital watermarking information being based on at least one range of amplitudes within which a frequency representation of said audio signal is sampled during compression processing.

However, Quackenbush teaches that integrating watermarking with compression provides resistance to collusion attacks (col. 3, lines 10-15) by dividing the signal into scale factor bands (producing discrete amplitude ranges in each band) and creating watermarking information (multipliers) based on these bands (col. 6, lines 27-45). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Swanson to base the watermarking information also on at least one range of amplitudes within which a frequency representation of said audio signal is sampled during compression processing. One of ordinary skill in the art would have been motivated to perform such a modification to increased resistance to collusion attacks and to make the resulting mark imperceptible, as taught by Quackenbush (col. 3, lines 10-15 & col. 6, lines 27-45).

Regarding claims 2, 7 & 12, Swanson discloses the psychological auditory sense analysis information being generated based on a predetermined minimum level of audio signal that can be detected by the auditory sense of a human being (Human auditory system, HAS) (p. 2, last ¶ - p. 3, ¶1, p. 5, §3.1 & p. 10, #2).

Regarding claims 3, 8 & 13, Swanson discloses the psychological auditory sense analysis information being generated on the basis of the masking effect of the audio signal (p. 10, #1 & p. 3, ¶1).

Regarding claims 5, 10 & 15, Swanson discloses embedding copyright information relevant to the input signal (p. 1, ¶1).

### *Conclusion*

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2134

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Simitoski whose telephone number is (571) 272-3841.

The examiner can normally be reached on Monday - Thursday, 6:45 a.m. - 4:15 p.m..


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques Louis-Jacques can be reached on (571) 272-6962. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJS



August 15, 2006



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